EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	560	343/757.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 14:35
S78	2761	455/13.3.ccls or 455/19.ccls. or 455/25.ccls. or 455/562.1.ccls. or 455/575.7.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/12 16:43
S79	6	("20060212570"|"20060224434"|"5581694").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:25
S80	15	("6088665"|"6618745"|"6792321"|"6888453"|"6950778"|"7016812"|"7103511").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:27
S81	14	(("20060136627") or ("20040008140") or ("20030228857") or ("20030222818") or ("20030172221") or ("20020123864") or ("20020027504")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:28
S82	20	(("7165109") or ("6421354") or ("6640145") or ("6504829") or ("6208247") or ("20050021724") or ("20040090326") or ("20030151513") or ("20020161751") or ("20010027495")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:32
S83	8	(("20030222818") or ("20010027495") or ("20040008140") or ("20030228857")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:37

EAST Search History

S84	6	(("6208247") or ("6640145") or ("20030236866")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:37
S85	25010	mote	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:40
S86	120	S85 and directional adj2 antenna	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/13 10:53
S87	2	(mote and directional adj2 antenna).clm.	US-PGPUB; USPAT	OR	OFF	2007/09/13 10:54

Andrew Wendell 10813967

WEB Site
Mote
Smartdust is a network of tiny wireless microelectromechanical sensors (MEMS), robots, or devices, installed with wireless communications, that can detect anything from light and temperature, to vibrations, etc.
en.wikipedia.org/wiki/Mote

Scitech files

File 2:INSPEC 1898-2007/Mar W4
(c) 2007 Institution of Electrical Engineers
File 6:NTIS 1964-2007/Apr W1
(c) 2007 NTIS, Intl Cpyrght All Rights Res
File 8:Ei Compendex(R) 1884-2007/Mar W4
(c) 2007 Elsevier Eng. Info. Inc.
File 34:SciSearch(R) Cited Ref Sci 1990-2007/Apr W1
(c) 2007 The Thomson Corp
File 35:Dissertation Abs Online 1861-2007/Mar
(c) 2007 ProQuest Info&Learning
File 56:Computer and Information Systems Abstracts 1966-2007/Mar
(c) 2007 CSA.
File 57:Electronics & Communications Abstracts 1966-2007/Mar
(c) 2007 CSA.
File 65:Inside Conferences 1993-2007/Apr 05
(c) 2007 BLDSC all rts. reserv.
File 95:TEME-Technology & Management 1989-2007/Apr W1
(c) 2007 FIZ TECHNIK
File 99:Wilson Appl. Sci & Tech Abs 1983-2007/Mar
(c) 2007 The HW Wilson Co.
File 144:Pascal 1973-2007/Mar W4
(c) 2007 INIST/CNRS
File 239:Mathsci 1940-2007/May
(c) 2007 American Mathematical Society
File 256:TecInfoSource 82-2007/Oct
(c) 2007 Info.Sources Inc
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 2006 The Thomson Corp
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
(c) 2002 The Gale Group
File 603:Newspaper Abstracts 1984-1988
(c)2001 ProQuest Info&Learning
File 483:Newspaper Abs Daily 1986-2007/Apr 05
(c) 2007 ProQuest Info&Learning

Set	Items	Description
S1	2177	MOTE
S2	3877	DIRECTIONAL()ANTENNA?
S3	0	AU=(TEGREENE, C? OR TEGREENE C?)
S4	7	S1 AND S2
S5	5	RD S4 (unique items)

5/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2007 Institution of Electrical Engineers. All rts. reserv.

10170046
Title: Topology insensitive location determination using independent estimates through semi- directional antennas
Author(s): Chin-Lung Yang; Bagchi, S.; Chappell, W.J.
Author Affiliation: Electr. & Comput. Eng. Dept., Purdue Univ., West Lafayette, IN, USA
Journal: IEEE Transactions on Antennas and Propagation vol.54, no.11, pt.2 p.3458-72
Publisher: IEEE,
Publication Date: Nov. 2006 Country of Publication: USA
CODEN: IETPAK ISSN: 0018-926X

SICI: 0018-926X(200611)54:11:2L.3458:TILD;1-L
Material Identity Number: I032-2006-013
Language: English
Subfile: B
Copyright 2006, The Institution of Engineering and Technology

Title: Topology insensitive location determination using independent estimates through semi- directional antennas
...Abstract: network. A method of determining the location of a target by using multiple compact semi- **directional antennas** is shown to give an independent estimate of location from each sensor **mote** in a network, each estimate not relying on the data from neighboring motes as in...

... traditional triangulation. We begin by demonstrating a method of using angular diversity through multiple semi- **directional antennas** in order to ascertain the location of a target. The estimation of both range and...

... a noisy and/or faded channel. An efficient and fast algorithm on a wireless sensor **mote** is presented through a Taylor series expansion of the simulated antenna pattern. Furthermore, using the...

5/3,K/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2007 Institution of Electrical Engineers. All rts. reserv.

09735042
Title: Location tracking with directional antennas **in wireless sensor networks**
Author(s): Chin-Lung Yang; Bagchi, S.; Chappell, W.J.
Author Affiliation: Dept. of Electr. & Comput. Eng., Purdue Univ., West Lafayette, IN, USA
Conference Title: 2005 IEEE MTT-S International Microwave Symposium (IEEE Cat. No.05CH37620C) p.4 pp.
Editor(s): Choudhury, D.
Publisher: IEEE, Piscatway, NJ, USA
Publication Date: 2005 Country of Publication: USA CD-ROM pp.
ISBN: 0 7803 8845 3 Material Identity Number: XX-2006-00060
U.S. Copyright Clearance Center Code: 0 7803 8845 3/2005/$20.00

Conference Title: 2005 IEEE MTT-S International Microwave Symposium
Conference Date: 12-17 June 2005 Conference Location: Long Beach, CA, USA
Language: English
Subfile: B
Copyright 2006, IEE

Title: Location tracking with directional antennas **in wireless sensor networks**
Abstract: In this paper, we investigate the use of multiple **directional antennas** on sensor motes for location determination and mobile node monitoring. One key aspect that distinguishes...

... propose and demonstrate a location estimation algorithm on a single sensor node equipped with inexpensive **directional antennas** by measuring the received signal strength of the transmission peers. This algorithm is further applied to the dynamic tracking of a wandering **mote** . The location tracking error can be reduced from 30% to 16% by using moving average...

...estimates can be obtained to provide the certainty of location tracking. Therefore, only a single **mote** with angular diverse multiple antennas is needed to determine the location of a **mote** without triangulation.
...Identifiers: multiple **directional antennas** ;

5/3,K/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2007 Institution of Electrical Engineers. All rts. reserv.

09598287 INSPEC Abstract Number: B2005-11-6250-245, C2005-11-5620W-166
Title: Location estimation in ad-hoc networks with directional antennas
Author(s): Malhotra, N.; Krasniewski, M.; Yang, C.; Bagchi, S.; Chappell, W.
Author Affiliation: Sch. of Electr. & Comput. Eng., Purdue Univ., West Lafayette, NJ, USA
Conference Title: 25th IEEE International Conference on Distributed Computing Systems p.633-42
Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA
Publication Date: 2005 Country of Publication: USA xviii+827 pp.
ISBN: 0 7695 2331 5 Material Identity Number: XX-2005-00952
U.S. Copyright Clearance Center Code: 0 7695 2331 5/2005/$20.00
Conference Title: 25th IEEE International Conference on Distributed Computing Systems
Conference Sponsor: IEEE Comput. Soc. Tech. Comm. on Distributed Process. (TCDP)
Conference Date: 6-10 June 2005 Conference Location: Columbus, OH, USA
Language: English
Subfile: B C
Copyright 2005, IEE
Title: Location estimation in ad-hoc networks with directional antennas
...Abstract: sensor nodes using omnidirectional antennas. However, an increasing number of sensor systems are now deploying **directional antennas** due to their advantages like energy conservation and better bandwidth utilization. In this paper, we present techniques for location determination in a sensor network with **directional antennas** under different kinds of deployment of the nodes. We show how the location

estimation problem...

... the received signal strength from just one or two anchors in a 2D plane with **directional antennas** . We implement our technique using Berkeley MICA2 sensor motes and show that it is up...
...Identifiers: **directional antenna** ; ...

...Berkeley MICA2 sensor **mote** ;

5/3,K/4 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
(c) 2007 Elsevier Eng. Info. Inc. All rts. reserv.

11379399 E.I. No: EIP06491028444
Title: Topology insensitive location determination using independent estimates through semi- directional antennas
Author: Yang, Chin-Lung; Bagchi, Saurabh; Chappell, William J.
Corporate Source: Center for Wireless Systems and Applications Electrical and Computer Engineering Department Purdue University, West Lafayette, IN 47907, United States
Source: IEEE Transactions on Antennas and Propagation v 54 n 11 November 2006. p 3458-3472
Publication Year: 2006
CODEN: IETPAK ISSN: 0018-926X
DOI: 10.1109/TAP.2006.884294
Language: English

Title: Topology insensitive location determination using independent estimates through semi- directional antennas
...Abstract: network. A method of determining the location of a target by using multiple compact semi- **directional antennas** is shown to give an independent estimate of location from each sensor **mote** in a network, each estimate not relying on the data from neighboring motes as in...
...traditional triangulation. We begin by demonstrating a method of using angular diversity through multiple semi- **directional antennas** in order to ascertain the location of a target. The estimation of both range and...

...a noisy and/or faded channel. An efficient and fast algorithm on a wireless sensor **mote** is presented through a Taylor series expansion of the simulated antenna pattern. Furthermore, using the...
Identifiers: Semi- **directional antennas** ; Taylor series expansion; Location determination; Sensor networks

5/3,K/5 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
(c) 2007 Elsevier Eng. Info. Inc. All rts. reserv.

11260139 E.I. No: EIP06401015226
Title: Location tracking with directional antennas **in wireless sensor networks**
Author: Yang, Chin-Lung; Bagchi, Saurabh; Chappell, William J.
Corporate Source: Department of Electrical and Computer Engineering Purdue University, West Lafayette, IN 47907, United States
Conference Title: 2005 IEEE MTT-S International Microwave Symposium

Conference Location: Long Beach, CA, United States Conference Date: 20050612-20050617
E.I. Conference No.: 68262
Source: IEEE MTT-S International Microwave Symposium Digest 2005 IEEE MTT-S International Microwave Symposium Digest v 2005 2005. (IEEE cat n 05CH37620C)
Publication Year: 2005
CODEN: IMIDDM ISSN: 0149-645X
DOI: 10.1109/MWSYM.2005.1516540
Article Number: 1516540
Language: English

Title: Location tracking with directional antennas **in wireless sensor networks**
Abstract: In this paper, we investigate the use of multiple **directional antennas** on sensor motes for location determination and mobile node monitoring. One key aspect that distinguishes...

...propose and demonstrate a location estimation algorithm on a single sensor node equipped with inexpensive **directional antennas** by measuring the received signal strength of the transmission peers. This algorithm is further applied to the dynamic tracking of a wandering **mote** . The location tracking error can be reduced from 30% to 16% by using moving average...

...estimates can be obtained to provide the certainty of location tracking. Therefore, only a single **mote** with angular diverse multiple antennas is needed to determine the location of a **mote** without triangulation. copy 2005 IEEE. 4 Refs.
Identifiers: Location estimation; Sensor networks; **Directional antennas** ; Transmission peers
?

PATENT FILES

File 344:Chinese Patents Abs Jan 1985-2006/Jan
(c) 2006 European Patent Office
File 347:JAPIO Dec 1976-2006/Dec(Updated 070403)
(c) 2007 JPO & JAPIO
File 350:Derwent WPIX 1963-2006/UD=200722
(c) 2007 The Thomson Corporation

Set	Items	Description
S1	343	MOTE
S2	3899	DIRECTIONAL(3N)ANTENNA?
S3	4	S1 AND S2

3/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0015366496 - Drawing available
WPI ACC NO: 2005-747689/200576
Related WPI Acc No: 2005-711634; 2005-711635; 2005-712043; 2005-712660; 2005-733048; 2005-734077; 2005-747173; 2005-747648; 2005-747649;

2005-747650; 2005-747651; 2005-747652; 2005-747653; 2005-747654; 2005-747655; 2005-747681; 2005-747688; 2005-747690; 2005-747691; 2005-747692; 2005-747720; 2005-747746; 2005-747747; 2005-747748; 2005-758901
XRPX Acc No: N2005-616658
Mote **system in** mote **-appropriate network, includes** directional antenna **system such as beam-forming antenna system or beam-steering antenna system, coupled to antenna signal generation unit or antenna signal detection unit**
Patent Assignee: SEARETE LLC (SEAR-N)
Inventor: TEGREENE C T
Patent Family (1 patents, 107 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
WO 2005099141	A2	20051020	WO 2005US10054	A	20050324	200576 B

Priority Applications (no., kind, date): US 2004816375 A 20040331; US 2004816364 A 20040331; US 2004816358 A 20040331; US 2004816102 A 20040331; US 2004816082 A 20040331; US 2004814454 A 20040331; US 2004813967 A 20040331

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2005099141	A2	EN	52	18	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Mote **system in** mote **-appropriate network, includes** directional antenna **system such as beam-forming antenna system or beam-steering antenna system, coupled to antenna...**

Original Titles:
MOTE NETWORKS HAVING **DIRECTIONAL ANTENNAS**

Alerting Abstract ...NOVELTY - The **mote** system includes a **directional antenna** system such as beam-forming antenna system or beam-steering antenna system, coupled to antenna...
USE - **Mote** system including **mote** comprising coherent or non-coherent light transmitters, coherent or non-coherent light receivers, electrical/magnetic...

...transmitters/receivers, temperature transmitters/receivers, gas/liquid volume transmitters/receivers and inertial force transmitters/receivers, **directional antenna** system such as beam-forming antenna system, beam-steering antenna system, switched-beam antenna system...

...horn antenna or biconical antenna, attached to building, bridge, machine, rodent, birds or animals, in **mote** -appropriate network...

...ADVANTAGE - Realizes the **mote** system with efficient **directional**

antenna system...

...DESCRIPTION OF DRAWINGS - The figure shows an explanatory diagram of the motes connected through **mote** -appropriate network...

...218,268,258,278,288 **directional antennas**

Original Publication Data by Authority

Original Abstracts:
A mote network having and/ **or** using one or more directional antennas.

3/3,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0015366495 - Drawing available
WPI ACC NO: 2005-747688/200576
Related WPI Acc No: 2005-711634; 2005-711635; 2005-712043; 2005-712660; 2005-733048; 2005-734077; 2005-747173; 2005-747648; 2005-747649; 2005-747650; 2005-747651; 2005-747652; 2005-747653; 2005-747654; 2005-747655; 2005-747681; 2005-747689; 2005-747690; 2005-747691; 2005-747692; 2005-747720; 2005-747746; 2005-747747; 2005-747748; 2005-758901
XRPX Acc No: N2005-616657
Mote **method in** mote **-appropriate network, involves determining direction of antenna associated with** mote **, in response to monitored indicators of field strength of** directional antenna **of another** mote
Patent Assignee: SEARETE LLC (SEAR-N)
Inventor: TEGREENE C T
Patent Family (1 patents, 107 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
WO 2005099140	A2	20051020	WO 2005US10053	A	20050324	200576 B

Priority Applications (no., kind, date): US 2004816375 A 20040331; US 2004816364 A 20040331; US 2004816358 A 20040331; US 2004816102 A 20040331; US 2004816082 A 20040331; US 2004814454 A 20040331; US 2004813967 A 20040331

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2005099140	A2	EN	57	18	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Mote **method in** mote **-appropriate network, involves determining direction of antenna associated with** mote **, in response to monitored indicators of**

field strength of directional antenna **of another** mote

Original Titles:
MOTE NETWORKS USING **DIRECTIONAL ANTENNA** TECHNIQUES...

Alerting Abstract ...NOVELTY - The field of **directional antenna** in a **mote** is adjusted. The indicators of the received signal strength of the **directional antenna** in the **mote** , are monitored after adjusting the field of antenna. The direction of antenna associated with another **mote** is determined, in response to the monitored indicators of the field strength of the **directional antenna** of the **mote** . USE - In **mote** comprising coherent or non-coherent light transmitters, coherent or non-coherent light receivers, electrical/magnetic...

...and inertial force transmitters/receivers, attached to building, bridge, machine, rodent, birds or animals, in **mote** -appropriate network...

...ADVANTAGE - Enables easy and reliable determination of the direction of antenna in anther **mote** .
...

...DESCRIPTION OF DRAWINGS - The figure shows a flowchart explaining **mote** process.

Original Publication Data by Authority

Original Abstracts:
A mote network having and/ **or** using one or more directional antennas.

3/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0015365708 - Drawing available
WPI ACC NO: 2005-734077/200575
Related WPI Acc No: 2005-711634; 2005-711635; 2005-712043; 2005-712660; 2005-733048; 2005-747173; 2005-747648; 2005-747649; 2005-747650; 2005-747651; 2005-747652; 2005-747653; 2005-747654; 2005-747655; 2005-747681; 2005-747688; 2005-747689; 2005-747690; 2005-747691; 2005-747692; 2005-747720; 2005-747746; 2005-747747; 2005-747748; 2005-758901
XRPX Acc No: N2005-604354
Content index aggregating method in mote **-aggregating network, involves aggregating portions of** mote **-addressed content indexes from set of motes**
Patent Assignee: JUNG E K Y (JUNG-I); SEARETE LLC (SEAR-N); TEGREENE C T (TEGR-I)
Inventor: JUNG E K Y; TEGREENE C T
Patent Family (3 patents, 107 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 2005094494	A2	20051013	WO 2005US9703	A	20050322	200575 B
US 20050233699	A1	20051020	US 2004813967	A	20040331	200575 E
US 20060079285	A1	20060413	US 2004816082	A	20040331	200626 E

Priority Applications (no., kind, date): US 2004816375 A 20040331; US

2004816364 A 20040331; US 2004816358 A 20040331; US 2004816102 A 20040331; US 2004816082 A 20040331; US 2004814454 A 20040331; US 2004813967 A 20040331

Patent Details
Number Kind Lan Pg Dwg Filing Notes
WO 2005094494 A2 EN 64 11
National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Content index aggregating method in mote **-aggregating network, involves aggregating portions of** mote **-addressed content indexes from set of motes**

Original Titles:
Mote networks having **directional antennas**
...

...Transmission of **mote** -associated index data...

...AGGREGATING **MOTE** -ASSOCIATED INDEX DATA

Alerting Abstract ...NOVELTY - The method involves aggregating portions of **mote** -addressed content indexes from a set of motes. Multi- **mote** content indexes are created for the set of motes.DESCRIPTION - The term " **mote** " typically means a semi-autonomous computing communications entities. An INDEPENDENT CLAIM is also included for...

...USE - For aggregating **mote** -addressed content indexes in **mote** -aggregating network...

...ADVANTAGE - The **mote** -addressed content indexes can be aggregated quickly...

...DESCRIPTION OF DRAWINGS - The figure shows a schematic view of the **mote** -aggregating network.

Original Publication Data by Authority

Original Abstracts:
A mote network having and/ **or** using one or more directional antennas.

...

...Methods and/or systems relating to mote networks having one or more indexes.

...

...to mote networks having one or more indexes.

Claims:
1. A mote system comprising:at **least** one of an antenna signal generation unit or an antenna signal detection unit; anda directional antenna system operably coupled with said at **least one** of an antenna signal generation unit or an antenna signal detection unit

3/3,K/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0015361775 - Drawing available
WPI ACC NO: 2005-712043/200573
Related WPI Acc No: 2005-711634; 2005-711635; 2005-712660; 2005-733048; 2005-734077; 2005-747173; 2005-747648; 2005-747649; 2005-747650; 2005-747651; 2005-747652; 2005-747653; 2005-747654; 2005-747655; 2005-747681; 2005-747688; 2005-747689; 2005-747690; 2005-747691; 2005-747692; 2005-747720; 2005-747746; 2005-747747; 2005-747748; 2005-758901
XRPX Acc No: N2005-584726
Mote **network providing method, involves moving field of regard such that field of regard of** mote directional antenna **is operably aligned with beam of other** mote directional antenna
Patent Assignee: SEARETE LLC (SEAR-N)
Inventor: TEGREENE C T
Patent Family (1 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
US 20050221761	A1	20051006	US 2004814454	A	20040331	200573 B

Priority Applications (no., kind, date): US 2004814454 A 20040331
Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20050221761	A1	EN	30	18	

Mote **network providing method, involves moving field of regard such that field of regard of** mote directional antenna **is operably aligned with beam of other** mote directional antenna

Original Titles:
Mote networks using **directional antenna** techniques

Alerting Abstract ...NOVELTY - The method involves adjusting a field of regard of a **mote** directional antenna . Indicators of a received signal strength of the antenna are monitored. A direction associated with another **mote directional antenna** is determined, in response to the indicators of the former antenna. Another field of regard...
DESCRIPTION - An INDEPENDENT CLAIM is also included for a **mote** system for adjusting a beam of a second- **mote directional antenna** .
...

...USE - Used for providing a networking **mote** .
...

...ADVANTAGE - The field of regard is moved such that the field of regard of the **directional antenna** is operably aligned with the beam of the other **directional antenna** , thus effectively receiving and transmitting a signal between the **directional antennas** . The method reduces time to align the antennas by monitoring levels, level changes and rates...

...DESCRIPTION OF DRAWINGS - The drawing shows a **mote** of a **mote** -appropriate network...

...100 **Mote**
...

...150 **Mote** -appropriate network

Original Publication Data by Authority

Original Abstracts:
A mote network having and/ **or** using one or more directional antennas.
Claims:
1. A mote method comprising:adjusting **a** field of regard of a first-mote directional antenna;monitoring one or **more indicators of** a received signal strength of the first-mote directional antenna; anddetermining a direction associated **with a second** mote in response to the monitored one or more indicators **of** the received signal strength of the first-mote directional antenna.
?

PATENTS FOREIGN

File 348:EUROPEAN PATENTS 1978-2007/ 200708
(c) 2007 European Patent Office
File 349:PCT FULLTEXT 1979-2007/UB=20070329UT=20070322
(c) 2007 WIPO/Thomson

Set	Items	Description
S1	2679	MOTE
S2	5257	DIRECTIONAL(3N)ANTENNA?
S3	14	S1(S)S2

3/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2007 European Patent Office. All rts. reserv.

01994917
MOTE **NETWORKS USING** DIRECTIONAL ANTENNA **TECHNIQUES**
RESEAUX DE MOTES METTANT EN OEUVRE DES TECHNIQUES D'ANTENNES DIRECTIVES
PATENT ASSIGNEE:
Searete LLC., (7047570), 1756 - 114th Ave SE 110, Bellevue, WA 98004, (US), (Applicant designated States: all)

INVENTOR:
TEGREENE, Clarence, T., 10629 NE 17th Street, Bellevue, WA 98004-2834, (US)
PATENT (CC, No, Kind, Date):
WO 2005099140 051020
APPLICATION (CC, No, Date): EP 2005731395 050324; WO 2005US10053 050324
PRIORITY (CC, No, Date): US 816358 040331; US 813967 040331; US 816364 040331; US 816375 040331; US 816082 040331; US 816102 040331; US 814454 040331
DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LI; LT; LU; MC; NL; PL; PT; RO; SE; SI; SK; TR
EXTENDED DESIGNATED STATES: AL; BA; HR; LV; MK; YU
INTERNATIONAL PATENT CLASS (V7): H04J-003/22
LANGUAGE (Publication,Procedural,Application): English; English; English
MOTE **NETWORKS USING** DIRECTIONAL ANTENNA **TECHNIQUES**

3/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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01994659
MOTE **NETWORKS HAVING** DIRECTIONAL ANTENNAS
RESEAUX DE MOTES POSSEDANT DES ANTENNES DIRECTIVES
PATENT ASSIGNEE:
Searete LLC., (7047570), 1756 - 114th Ave SE 110, Bellevue, WA 98004, (US), (Applicant designated States: all)
INVENTOR:
TEGREENE, Clarence T., 10629 NE 17th Street, Bellevue, WA 98004-2834, (US)
PATENT (CC, No, Kind, Date):
WO 2005099141 051020
APPLICATION (CC, No, Date): EP 2005730101 050324; WO 2005US10054 050324
PRIORITY (CC, No, Date): US 816082 040331; US 816358 040331; US 816364 040331; US 816375 040331; US 814454 040331; US 813967 040331; US 816102 040331
DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LI; LT; LU; MC; NL; PL; PT; RO; SE; SI; SK; TR
EXTENDED DESIGNATED STATES: AL; BA; HR; LV; MK; YU
INTERNATIONAL PATENT CLASS (V7): H04J-003/22
LANGUAGE (Publication,Procedural,Application): English; English; English
MOTE **NETWORKS HAVING** DIRECTIONAL ANTENNAS

3/3,K/3 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291458 **Image available**
FREQUENCY REUSE TECHNIQUES IN MOTE-APPROPRIATE NETWORKS
TECHNIQUES DE REUTILISATION DES FREQUENCES DANS DES RESEAUX COMPATIBLES
AVEC DES CAPTEURS SANS FIL
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, WA 98005-1403, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Searete LLC, 1756-114th Avenue SE, #110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599037 A2 20051020 (WO 0599037)
Application: WO 2005US11203 20050330 (PCT/WO US05011203)
Priority Application: US 2004814454 20040331; US 2004816364 20040331; US 2004816102 20040331; US 2004816358 20040331; US 2004813967 20040331; US 2004816082 20040331; US 2004816375 20040331; US 2004844613 20040512; US 2004844614 20040512; US 2004844564 20040512; US 2004843987 20040512; US 2004844612 20040512; US 2004850914 20040521; US 2004877109 20040625; US 2004877099 20040625
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 29940

Fulltext Availability:
Detailed Description

Detailed Description
... Clarence T.

Tegreene as inventors, filed 31 March 2004.

11. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as inventor, filed 31 March 2004.

12. United States patent application entitled MOTE NETWORKS USING **DIRECTIONAL ANTENNA** TECHNIQUES, naming Clarence T.

Tegreene as inventor, filed 31 March 2004.

13. United States patent...

3/3,K/4 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

(c) 2007 WIPO/Thomson. All rts. reserv.

01291381 **Image available**
AGGREGATION AND RETRIEVAL OF NETWORK SENSOR DATA
AGREGATION ET EXTRACTION DE DONNEES DE CAPTEUR DE RESEAU
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th SE, Suite 110, Bellevue, Washington 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, Washington 98005, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, Washington 98004, US , US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Intellectual Ventures, 1756 114th SE, Suite 110, Bellevue, Washington 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599036 A2 20051020 (WO 0599036)
Application: WO 2005US10955 20050329 (PCT/WO US05010955)
Priority Application: US 2004814454 20040331; US 2004816102 20040331; US 2004816375 20040331; US 2004816082 20040331; US 2004813967 20040331; US 2004816364 20040331; US 2004816358 20040331; US 2004844564 20040512; US 2004844612 20040512; US 2004843987 20040512; US 2004844614 20040512; US 2004844613 20040512; US 2004850914 20040521; US 2004877109 20040625; US 2004877099 20040625; US 2004882119 20040630; US 2004900163 20040727; US 2004900147 20040727; US 2004909200 20040730; US 2004903692 20040730; US 2004903652 20040730
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 21901

Fulltext Availability:
Detailed Description

Detailed Description
... 2004, attorney docket number 0 1 04-003 000000.

6. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as inventor, filed 31 March 2004, attorney docket
number 0 1 04 006
7. United States patent application entitled **MOTE** NETWORKS USING **DIRECTIONAL ANTENNA** TECHNIQUES, naming Clarence T. Tegreene as

inventor, filed 31 March 2004,
1 5 attorney docket...

...May 2004, attorney
docket number 0104 008
9. United States patent application entitled TRANSMISSION OF **MOTE** -ASSOCIATED LOG DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

...May
2004, attorney docket number 01 04 009
10. United States patent application entitled AGGREGATING **MOTE** -ASSOCIATED LOG DATA, naming Edward K.Y. Juno and Clarence T. Tegreene as inventors, filed...

...04-003 -0 I 0
2
1 - 'United States patent application entitled TRANSMISSION OF AGGREGATED **MOTE**
ASSOCIATED LOG DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed 12 May 2004, attorney docket number 0104 011
12. United States patent application entitled FEDERATING **MOTE** -ASSOCIATED LOG DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed 12 May
2004, attorney docket number 0104 012
1. United States patent application entitled USING **MOTE** -ASSOCIATED LOGS7naniing I 0 Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

...2004, attorney
docket number 01 04 013
2. United States patent application entitled USING FEDERATED **MOTE** -ASSOCIATED LOGS, naming Edward K.Y. Jung and Clarence T. Tegree-ne as ixiventors, filed...

3/3,K/5 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291380 **Image available**
DATA STORAGE FOR DISTRIBUTED SENSOR NETWORKS
STOCKAGE DE DONNEES DANS DES RESEAUX DE CAPTEURS REPARTIS
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th SE, Suite 110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, WA 98005, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Intellectual Ventures, 1756 114th SE, Suite 110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200596746 A2 20051020 (WO 0596746)

Application: WO 2005US10954 20050329 (PCT/WO US05010954)
Priority Application: US 2004816364 20040331; US 2004816375 20040331; US 2004813967 20040331; US 2004814454 20040331; US 2004816358 20040331; US 2004816102 20040331; US 2004816082 20040331; US 2004844614 20040512; US 2004844612 20040512; US 2004844613 20040512; US 2004844564 20040512; US 2004843987 20040512; US 2004850914 20040521; US 2004877099 20040625; US 2004877109 20040625; US 2004882119 20040630; US 2004900147 20040727; US 2004900163 20040727; US 2004903692 20040730; US 2004903652 20040730; US 2004909200 20040730
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 22943

Fulltext Availability:
Detailed Description

Detailed Description
... an application incorporated by reference, the instant application controls.

1. United States patent application'entitled **MOTE** -ASSOCIATED INDEX CREATION, 1 5 naming Edward K.Y. Jung and Clare-nee T. Tegreene...

...number 0 1 04-003 -001
2. United States patent application entitled TRANS1 4ISSION OF **MOTE** -ASSOCIATED INDEX DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

...March 2004, attorney docket number 01 04 002
3. United Stales patent application entitled AGGREGATING **MOTE** -ASSOCIATED INDEX DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

...31 March 2004, attorney docket number 0104 004
. United States patent application entitled FEDEIZ-ATING **MOTE** -ASSOCIATED INDEX DATA, naming Edward K.Y. Jung and Clarenm T. Tegreene as inventors, filed 31 March 2004,attomeydoclcetnumberOI04 005 ,
6. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as ixventor, filed 31 March 2004, attorney docket number 0 1 04 006
7. United States patent application entitled **MOTE** NETWORKS USING

DIRECTIONAL 1 0 **ANTENNA** TECHNIQUES, naming Clarence T. Xegreene as inventor, filed 31 March 2004,
attorney docket number 0104 007
8. United States patent application entitled **MOTE** -ASSOCIATED LOG CREATION, naming Edward K.Y. Jung and Clarence T. Tegreene as :inventors, filed...

3/3,K/6 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291340 **Image available**
DISCOVERY OF OCCURRENCE-DATA
DECOUVERTE DE DONNEES D'OCCURRENCE
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th SE, Suite 110, Bellevue, Washington 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, Washington 98005, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, Washington 98004, US , US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Intellectual Ventures, 1756 114th SE, Suite 110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599035 A2 20051020 (WO 0599035)
Application: WO 2005US10843 20050329 (PCT/WO US05010843)
Priority Application: US 2004814454 20040331; US 2004816102 20040331; US 2004816375 20040331; US 2004816082 20040331; US 2004813967 20040331; US 2004816364 20040331; US 2004816358 20040331; US 2004844564 20040512; US 2004844612 20040512; US 2004843987 20040512; US 2004844614 20040512; US 2004844613 20040512; US 2004850914 20040521; US 2004877109 20040625; US 2004877099 20040625; US 2004882119 20040630; US 2004900147 20040727; US 2004900163 20040727; US 2004903692 20040730; US 2004909200 20040730; US 2004903652 20040730
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 21016

Fulltext Availability:
Detailed Description

Detailed Description
... attorney docket number 0 1 04-003 000000.

3. United States patent application entitled AGGREGATING **MOTE** -ASSOCIATED INDEX DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

...2004, attorney docket nuxnber 0 1 04 004
5. United States patent application entitled FEDERATING **MOTE** -ASSOCIATED INDEX DATA, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed 31 March
2004, attorney docket number 0104 005
6. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Teareene as inventor, filed:') I March 2004, attorney docket
number 0104 006
7. United States patent application entitled **MOTE** NETWORKS USING **DIRECTIONAL ANTENNA** TECHNIQUES, naming Clarence T. Tegreene as inventor, filed 3 1 March 2004,
attorney docket number 0 1 04 007
8. United States patent application entitled **MOTE** -ASSOCIATED LOG CREATION, naming Edward K.Y. Jung and Clarence T. Tegreene as inventors, filed...

3/3,K/7 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291182 **Image available**
TRANSMISSION OF AGGREGATED MOTE-ASSOCIATED LOG DATA
TRANSMISSION DE DONNEES DE JOURNAUX D'EVENEMENT DE CAPTEURS SANS FIL
AGREGES
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, WA 98005-1403, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Searete LLC, 1756-114th Avenue SE #110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599034 A2 20051020 (WO 0599034)
Application: WO 2005US10253 20050328 (PCT/WO US05010253)
Priority Application: US 2004814454 20040331; US 2004816364 20040331; US 2004816102 20040331; US 2004816358 20040331; US 2004813967 20040331; US 2004816082 20040331; US 2004816375 20040331; US 2004844613 20040512; US 2004844614 20040512; US 2004844564 20040512; US 2004843987 20040512; US 2004844612 20040512
Designated States:
(All protection types applied unless otherwise stated - for applications

2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 16869

Fulltext Availability:
Detailed Description
Detailed Description
... Clarence T.

Tegreene as inventors, filed 31 March 2004.

10. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as inventor, filed 31 March 2004.

2.

. UnitedStatespatentapplicationentitledMOTE NETWORKS USING DIRECTIONAL...

3/3,K/8 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291180 **Image available**
AGGREGATING MOTE-ASSOCIATED LOG DATA
AGREGATION DE JOURNAUX D'EVENEMENTS DE CAPTEURS SANS FIL
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, WA 98005-1403, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Searete LLC, 1756-114th Avenue SE #110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599033 A2 20051020 (WO 0599033)
Application: WO 2005US10251 20050328 (PCT/WO US05010251)
Priority Application: US 2004814454 20040331; US 2004816364 20040331; US 2004816102 20040331; US 2004816358 20040331; US 2004813967 20040331; US 2004816082 20040331; US 2004816375 20040331; US 2004844613 20040512; US

2004844614 20040512; US 2004844564 20040512; US 2004843987 20040512; US 2004844612 20040512
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 18009

Fulltext Availability:
Detailed Description

Detailed Description
... Clarence T.

Tegreene as inventors, filed 31 March 2004.

- 2
. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as inventor, filed 31 March 2004.

11. UnitedStatespatentapplicationentitledMOTE NETWORKS USING DIRECTIONAL...

3/3,K/9 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291179 **Image available**
FEDERATING MOTE-ASSOCIATED LOG DATA
FEDERATION DE JOURNAUX D'EVENEMENTS DE CAPTEURS SANS FIL
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
JUNG Edward K Y, 13420 NE 36th Street, Bellevue, WA 98005-1403, US, US (Residence), US (Nationality), (Designated only for: US)
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Searete LLC, 1756-114th Avenue SE #110, Bellevue, WA 98004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200599032 A2 20051020 (WO 0599032)

Application: WO 2005US10250 20050328 (PCT/WO US05010250)
Priority Application: US 2004814454 20040331; US 2004816364 20040331; US 2004816102 20040331; US 2004816358 20040331; US 2004813967 20040331; US 2004816082 20040331; US 2004816375 20040331; US 2004844613 20040512; US 2004844614 20040512; US 2004844564 20040512; US 2004843987 20040512; US 2004844612 20040512
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 25940

Fulltext Availability:
Detailed Description

Detailed Description
... Clarence T.

Tegreene as inventors, filed 31 March 2004.

- 2
. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS** , naming Clarence T. Tegreene as inventor, filed 31 March 2004.

11. UnitedStatespatentapplicationentitledMOTE NETWORKS USING DIRECTIONALANTENNATECHNIQUES...

3/3,K/10 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2007 WIPO/Thomson. All rts. reserv.

01291106 **Image available**
FEDERATING MOTE-ASSOCIATED INDEX DATA
FEDERATION DE DONNEES D'INDEX ASSOCIEES A UN CAPTEUR SANS FIL
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
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Detailed Description

Detailed Description
... Clarence T. Tegreene as inventors, filed substantially contemporaneously herewith.
5. United States patent application entitled **MOTE** NETWORKS HAVING **DIRECTIONAL ANTENNAS**, naming Clarence T. Tegreene as inventor, filed substantially contemporaneously herewith.

6. UnitedStatespatentapplicationentitledMOTE NETWORKS USING DIRECTIONAL...

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01291104 **Image available**
MOTE **NETWORKS HAVING** DIRECTIONAL ANTENNAS
RESEAUX DE MOTES POSSEDANT DES ANTENNES DIRECTIVES
Patent Applicant/Assignee:
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Patent Applicant/Inventor:
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
COOK Dale R (agent), Searete LLC, 1756-114th Avenue SE, #110, Bellevue, WA 98004, US,
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MOTE **NETWORKS HAVING** DIRECTIONAL ANTENNAS
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Detailed Description
Claims

English Abstract
A mote network having and/or using one or more **directional antennas**.
Detailed Description
Mote Networks Having **Directional Antennas**
CROSS-REFERENCE TO RELATED APPLICATIONS
The present application is related to, claims the earliest available...

...one of an antenna signal generation unit or an antenna signal detection unit; and a **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...of an antenna signal generation unit or an antenna signal detection unit, and (ii) a **directional antenna** system operably - 2 couplable with said at least one of an antenna signal generation unit...

Claim
... making includes but is not limited to: fori-ning a mote body; and emplacing a **directional antenna** proximate to the **mote** body. In addition to the foregoing, other method aspects are described in the claims, drawings, and/or text forming a part of the present application. In one aspect a **mote** method of making includes but is not limited to: emplacing a **directional antenna** proximate to a **mote** body; and integrating the **mote** body with at least one of an animate or inanimate unit. In addition to the...

...set forth herein. 3
BRIEF DESCRIPTION OF THE FIGURES
Figure I shows an example of **mote** 100 of **mote** -appropriate network 150

that may serve as a context for introducing one or more processes...

...partial exploded views of motes 200, 250, and 270 that form a part of a **mote** network. Figure 3 depicts a high-level logic flowchart of a process. Figure 4 illustrates...

...AND/OR SYSTEM(S)

With reference now to Figure 1, shown is an example of **mote** I 00 of moteappropriate network 150 that may serve as a context for introducing one or more processes and/or devices described herein. A **mote** is typically composed of sensors, actuators, computational entities, and/or communications entities formulated, in most cases at least in part, from a substrate. As used herein, the term " **mote** " typically means a semi-autonomous computing, coniniunication, and/or sensing device as described in the **mote** literature (e.g., Intel Corporation's **mote** literature), as well as equivalents recognized by those having skill in the art. **Mote** 1 00 depicts a specific example of a more general **mote** , **Mote** I 00 is illustrated as having antenna 102, physical layer 104, antenna entity 1 1 9, network layer 1 0 8 (shown for sake of example as a **mote** -appropriate ad hoe routing application), light device entity 1 1 0, electrical /magnetic device entity...

...unit 204 may perform either or both detection and generation), antenna control unit 206, omni- **directional antenna** 218, and **directional antennas** 208, 209; the other components of **mote** I 00 are also present in **mote** 200, but not explicitly shown for sake of clarity. The **directional antennas** described herein may be any suitable **directional antennas** consistent with the teachings herein, such as beam-forming antennas, beam-steering antennas, switched-beam antennas, horn antennas, and/or adaptive **antennas** . Although **directional antennas** 208, 209 are illustrated as horn antennas, those skilled in the art will appreciate that **directional antennas** 208, 209 are representative of any suitable device consistent with the teachings herein, such as...

...antennas, horn antennas, and/or biconical antennas. The foregoing is also generally true for other **directional antennas** described herein. In addition, the inventor points out that in some implementations the antenna steering...

...electro-mechanical system components; in some implementations, the antenna steering units may include electromagnetic systems. **Mote** 250 is illustrated as similar to **mote** 100 of **mote** appropriate network 150 (Figure 1), but with the addition of antenna steering unit 252, antenna signal generation/detection unit 254, antenna control unit 256, onmidirectional **antenna** 268, and **directional antennas** 258, 259. The other components of **mote** 100 are also present in **mote** 250, but not explicitly shown for sake of clarity. The components of **mote** 250 fimction in fashions similar to like components described in relation to **mote** 200 and/or elsewhere herein. **Mote** 270 is illustrated as similar to **mote** 1 00 of **mote** appropriate network 150 (Figure 1), but with the addition of antenna steering unit 252, antenna signal generation/detection unit 274, antenna control unit 276, omnidirectional **antenna** 278, and **directional antennas** 288, 289. The other components of **mote** 100 are also present in **mote** 270, but not explicitly shown for sake of clarity. The components of **mote** 270 - 8 function in fashions similar to like components described in relation to **mote** 200

and/or elsewhere herein. Those skilled in the art will appreciate that there are various ways in which the **directional antennas** may be combined with the motes. In some implementations, semiconductor processing techniques are utilized to form at least a part of each **mote** having one or more **directional antennas** . In some implementations, micro-electromechanical-system or electrooptical techniques are utilized to form or control at least a part of each **mote** having one or more **directional antennas** . In some implementations, circuit techniques and circuit board substrates are used to form at least a part of each **mote** having one or more **directional antennas** . In some implementations, various combinations of the herein described techniques are used to form at least a part of each **mote** having one or more **directional antennas** .

11 PROCESS(ES) AND/OR SCHEME(S)
Following are a series of flowcharts depicting implementations...

...the process. Method step 302 depicts adjusting a field of regard of a first-mote **directional antenna** . Method step 304 illustrates monitoring one or more indicators of received signal strength, signal-to-noise ratio, or 9 other signal characteristic, of the first-**mote directional antenna** . Method step 306 shows determining a direction associated with a second **mote** in response to the monitored one or more indicators of the received signal strength of the first- **mote directional antenna** . Method step 308 depicts adjusting the field of regard of the first- **mote directional antenna** to orient toward the determined direction associated with the second **mote** . Method step 3 1 0 depicts the end of the process. Specific example implementations of...

...shows moving the field of regard such that the field of regard of the first- **mote directional antenna** will likely operably align with a beam of a second- **mote directional antenna**. (By convention, "field of regard" is sometimes used herein when describing an example wherein an ...

...control unit 256 directs antenna steering unit 252 to sweep a field of regard of **directional antenna** 258 at a rate likely to be different from that of a rate of sweep of a beam of another **directional antenna** . For example, **antenna** control units 206, 256 directing their respective antenna steering units 202, 252 to sweep their respective **directional antennas** 208, 258 at rates which are likely to be different. One implementation of the foregoing...

...control wait 206, 256 to direct their respective antenna steering units 202, 252 to rotate **directional antennas** 208, 258 for a time period long enough such that **directional antenna** 208 completes 360 total rotations. - I 0 Referring now to Figure 5, illustrated is a...

...varied by a quasi-random amount from a nominal rate of rotation of the first- Imote directional antenna and the second- **mote directional antenna** . In one embodiment of method step 500, antenna control unit 256 directs antenna steering unit 252 to rotate a field of regard of **directional antenna** 258 at a rate of rotation varied by a quasi-random amount from a nominal rate of rotation shared by at least one other **mote** (as used herein, "nominal" generally means according to plan or design). For example, in, one...

...logic to vary that recalled nominal rate of rotation by some amount to devise a **mote** 250 resultant rate of rotation (e.g., 360 degrees/unit-time). Thereafter, antenna control unit 256 directs antenna steering unit 252 to rotate **directional antenna** 258 at the **mote** 250 resultant rate of rotation. At or around the same time, antenna control unit 202 engages in a similar set of operations to devise a **mote** 200 rate of rotation. Insofar as that the **mote** 200 rate of rotation and the **mote** 250 rate of rotation were devised by quasi-random variations on substantially the same nominal rates of rotation, it is likely that the **mote** 200 rate of rotation will be different than the **mote** 250 rate of rotation. Hence, eventually the field of regard of **directional antenna** 208 will operably align with the beam of **directional antenna** 258 such that signals may be respectively received/transmitted between the **directional antennas**. In some implementations, the **directional antennas** are rotated for a pre-specified period of time. In some implementations, the **directional antennas** are rotated until either a strong signal is detected or a timeout occurs. In one...

...control unit 256 directs antenna steering unit 252 to move a field of regard of **directional** antenna 258 through a series of angles at a rate of movement derived from random number...

...control unit 256 directs antenna steering unit 252 to move a field of regard of **directional antenna** 258 at some rate of rotation for a period of time derived from random number...

...steering unit 202 to selectively delay received signals such that a field of regard of **directional antenna** 208 is varied. Continuing to refer to Figure 6, shown is that in some implementations...

...one or more antenna elements. In some implementations of method step 600, such as where **directional antenna** 258 is implemented with discrete antenna elements (e.g., array antennas and/or Yagi antennas...

...of the signals of the discrete antenna elements to steer the field of regard of **directional antenna** 258 in a desired fashion (e.g., by numerical techniques and/or delay lines). Continuing...

...step 608. Method step 608 shows selectively displacing at least a part of the first- **mote directional antenna**. In some implementations of method step 608, such as instances where **directional antenna** 258 is implemented with a horn antenna or a biconical antenna, antenna steering unit 252...

...method step 302 includes method step 610. Method step 610 shows selectively tuning the first- **mote directional** antenna (e.g., via switchable tuning stubs). In some implementations of - 13 method step 61 0...

...switches in and out the various tuning stubs to direct the field of regard of
directional antenna 258
Referring now to Figure 7, illustrated is a high-level logic flowchart depicting an...

...700 shows logging one or more indicators of the received signal strength

of the first- **mote directional antenna** . In one embodiment of method step 700, antenna control unit 256 directs antenna signal generation...

...step 1002 depicts determining a direction of the - 15 field of regard of the first- **mote directional antenna** associated with the substantially maximum signal power. In one embodiment of method step 1 000...

...steering unit 252 to determine one or more locations along an are of movement of **directional antenna** 258 that correspond with the times at which the received signal strength of the beacon...

...the start of the process. Method step 1102 depicts adjusting a beam of a second- **mote directional antenna** . Method step 1 1 04 illustrates transmitting a signal over the beam of the second- **mote directional antenna** . Method step 1106 depicts the end of the process. Specific example implementations of the more...includes method step 1200. Method step 1200 shows selectively forming the beam of the second- **mote directional antenna** . In one embodiment of method step 1200, antenna control unit 206 directs antenna steering unit 202 to drive **directional antenna** 208 such that a beam is formed over one or more angular ranges. One example...

...includes method step 1202. Method step 1202 depicts selectively switching the beam of the second- **mote directional antenna** . In some implementations of method step 1202, antenna control unit 206 directs antenna steering unit 202 to switch elements of **directional antenna** 208 such that a beam is switched on across one or more angles. One example...

...includes method step 1204. Method step 1204 depicts selectively steering the beam of the second- **mote directional antenna** . In some implementations of method step 1204, antenna control unit 206 directs antenna steering unit 202 to selectively steer a beam of **directional antenna** 208 such that a beam is moved across one or more angles. One example of...

...includes method step 1206. Method step 1206 depicts selectively adapting the beam of the second- **mote directional antenna** . In some implementations of method step 1206, antenna control unit 206 directs antenna steering unit 202 to selectively adapt one or more beams of **directional antenna** 208 such that a beam is moved across one or more angles. One example of the foregoing could include selectively adapting the beam of the second- **mote directional antenna** . With reference again to Figures 3 and I 1, method step 302 of Figure 3...

...its supporting text, show and/or describe adjusting a field of regard of a first- **mote directional antenna** . Method step 1 1 02 of Figure 1 1, and its supporting text, illustrate - 17 and/or describe adjusting a beam of a second- **mote directional antenna** (e.g., **directional antenna** 208 of **mote** 200). Figures 4-6 show and/or describe several implementations of adjusting a field of regard of the first- **mote directional antenna** . The inventor points out that implementations substantially analogous to those shown for method step 302...

...herein will in general have a corresponding implementation by which the beam of a second- **mote directional antenna** is analogously adjusted.

Those having skill in the art will appreciate that insofar as that...
...that combines a known beacon signal with the carrier signal which is then transmitted from **directional antenna** 208. Those having ordinary skill of the art will appreciate that other signal generation techniques
...

...1502 depicts initiating at - 19 least one of said adjusting a beam of a second- **mote directional antenna** and/or said transmitting a signal over the beam of the second- **mote directional antenna** in response to said detecting the initiation signal. In one embodiment of method step 1500, antenna signal generation/detection unit 204 detects an incoming pre-defined seelc- **mote - antennas** signal over **directional antenna** 208. Signal generation/detection unit 204 informs antenna control unit 206 that the seekmote-antennas...

...signal and/or communicates with antenna steering unit 252 to begin adjusting a beam of **directional antenna** 208 as described herein (e.g., by moving the beam in an are or circle...

...of the process. Method step 1602 depicts adjusting a field of regard of a first- **mote directional antenna** in response to a direction associated with a second- **mote directional antenna** . Method step 1604 illustrates transmitting a signal from the first- **mote directional antenna** and/or receiving a signal from the first- **mote directional antenna** (e.g., transmitting the signal over a beam of the first- **mote directional antenna** and/or receiving the signal through a field of regard of the first- **mote directional antenna**). Method step 1606 depicts the end of the process. Specific example implementations of the more...

...embodiments method step 1602 includes method step 1700. Method step 1700 shows localizing the second- **mote directional antenna** . Specific example implementations of the more general process implementations of Figure 17 are described following...

...and thereafter use standard engineering practices to integrate such described devices and/or processes into **mote** processing systems. That is, at least a portion of the devices and/or processes described herein can be integrated into a **mote** processing system via a reasonable amount of experimentation. Those having skill in the art will recognize that a typical **mote** processing system generally includes one or more of a memory such as volatile and nonvolatile...

...or velocity; control motors for moving and/or adjusting components and/or quantities). A typical **mote** processing system may be implemented utilizing any suitable
available components, such as those typically found in **mote** -appropriate computing/coininunication systems, combined with standard engineering practices. Specific examples of such components entail commercially described components such
as Intel Corporation's **mote** components and supporting

hardware, software, and
firmware. - 23 The foregoing described aspects depict different components...

...one of an antenna signal generation unit or an antenna signal detection unit; and
a **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or an antenna signal detection unit.

2 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...comprises:
a beam-forming antenna system.
3 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...comprises:
a beam-steering antenna system.

4 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...comprises:
a switched-beam antenna system.

5 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or an antenna signal
detection unit further comprises:
a horn antenna system. 26 . The **mote** system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...
...one or more selected antenna patterns.

7 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...fixther comprises:
an adaptive-antenna system.

8 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...unit ftirther comprises:
a Yagi antenna.

9 The mote system of Claim 1, wherein said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or...

...fixther comprises:
a log-periodic antenna.
10 The mote system of Claim 1, wherein said **directional antenna** system

operably coupled with said at least one of an antenna signal generation unit or an antenna
signal detection unit further comprises:
a parabolic antenna.
I 1. The **mote** system of Claim 1, wherein said **directional antenna** system
operably coupled with said at least one of an antenna signal generation unit or an antenna
signal detection unit further comprises:
an array antenna. - 27
. The **mote** system of Claim 1, Wherein said **directional antenna** system
operably coupled with said at least one of an antenna signal generation unit or...

...unit further comprises:
a horn antenna.

13 The mote system of Claim 1, wherein said **directional antenna** system
operably coupled with said at least one of an antenna signal generation unit or...

...unit further comprises:
a biconical antenna.

14 The mote system of Claim 1, wherein said **directional antenna** system
operably coupled with said at least one of an antenna signal generation unit or...

...electromagnetic system.

18 The mote system of Claim 1, farther comprising:
a mote having said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or an antenna signal detection unit. 28
. The **mote** system of Claim 18, further comprising:
at least one of an animate or inanimate Unit in physical contact with said **mote** having said **directional antenna** system operably coupled with said at least one of an antenna signal generation unit or an antenna signal detection unit. 29
. A **mote** method of using comprising:
distributing a **mote** , the **mote** having
(i) at least one of an antenna signal generation unit or an antenna signal
detection unit, and
(H) a **directional antenna** system operably couplable with said at least one of an antenna signal generation unit or an antenna signal detection unit. 2 1. The **mote** method of Claim 20, wherein said distributing a **mote** further
comprises:
emplacing at least one of all animate or inanimate unit in physical contact with the **mote** .

22 The mote method of Claim 21, wherein said emplacing at least one of an

...

...mote. 30
. A mote method of making comprising:
forming- a mote body; and
emplacing a **directional antenna** proximate to the **mote** body.

25 The mote method of Claim 24, wherein said forming a mote body further
...

...body from a substrate.

26 The mote method of Claim 24, wherein said emplacing a **directional antenna**
proximate to the **mote** body further comprises:
forming at least a part of the **directional antenna** from a substrate.

27 The mote method of Claim 24, wherein said emplacing a **directional antenna**
proximate to the **mote** body further comprises:
affixing at least a part of the **directional antenna** to the **mote** body. 31
. A **mote** method comprising:
integrating a **directional antenna** proximate to a **mote** body with at least one of an animate or inanimate unit.

29 The mote method of Claim 28, wherein said integrating a **directional antenna** proximate to a **mote** body with at least one of an animate or inanimate unit ffirther
comprises:
at least one of affixing the **mote** body to or encasing the **mote** body in an inanimate structural component.

30 The mote method of Claim 28, wherein said integrating a **directional antenna** proximate to a **mote** body with at least one of an animate or inanimate unit ftu-ther
comprises:
at least one of affixing the **mote** body to or encasing the **mote** body in an animate structural component. 32

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MOTE **NETWORKS USING** DIRECTIONAL ANTENNA **TECHNIQUES**
RESEAUX DE MOTES METTANT EN OEUVRE DES TECHNIQUES D'ANTENNES DIRECTIVES
Patent Applicant/Assignee:
SEARETE LLC, 1756 114th Ave SE #110, Bellevue, WA 98004, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
TEGREENE Clarence T, 10629 NE 17th Street, Bellevue, WA 98004-2834, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:

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MOTE **NETWORKS USING** DIRECTIONAL ANTENNA **TECHNIQUES**

Fulltext Availability:

Detailed Description

Claims

English Abstract

A mote network having and/or using one or more **directional antennas** .

Detailed Description

Mote Networks Using **Directional Antenna** TeChniques

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is related to, claims the earliest...

...as inventors, filed substantially contemporaneously herewith.

6. United States patent application entitled Mote Networks Having **Directional Antennas** naming Clarence T. Tegreene as inventor, filed substantially contemporaneously herewith.

TECHNICAL FIELD

The present application...

...includes but is not limited to: adjusting a field of regard of a first-mote **directional antenna** ; monitoring one or more indicators of a received signal strength of the first- **mote directional antenna** signal; and determining a direction associated with a second **mote** in response to the monitored one or more indicators of the received signal strength of the first- **mote directional antenna** . In addition to the foregoing, other method aspects are described in the claims, drawings, and...

...mote method includes but is not limited to: adjusting a beam of a

second-mote **directional antenna** ; and transmitting a signal over the beam of the secondmote **directional antenna** . In addition to the foregoing, other method aspects are described in the claims, drawings, and...

...includes but is not limited to: adjusting a field of regard of a first-mote **directional antenna** in response to a direction associated with a second- **mote directional antenna** ; and at least one of transmitting a signal ftom the firstmote **directional antenna** or receiving a signal from the first- **mote directional antenna** . In addition to the foregoing, other method aspects are described in the claims, drawings, and...

...signal; and initiating at least one of said adjusting a beam of a second-mote **directional antenna** or said transmitting a signal over the beam of the second- **mote directional antenna** , in response to said detecting. In addition to the foregoing, other method aspects - 3 are...

...includes but is not limited to: adjusting a field of regard of a first-mote **directional antenna** in response to a direction associated with a second- **mote directional antenna** ; and at least one of transmitting a signal from the firstmote **directional antenna** or receiving a signal from the first- **mote directional antenna** . In addition to the foregoing, other method aspects are described in the claims, drawings, and...

...unit 204 may perform either or both detection and generation), antenna control unit 206, omni- **directional antenna** 218, and **directional antennas** 208, 209; the other components of **mote** 100 are also present in **mote** 200, but not explicitly shown for sake of clarity. The **directional antennas** described herein may be any suitable **directional antennas** consistent with the teakhings herein, such as beam-forming antennas, beam-steering antennas, switched-beam antennas, horn antennas, and/or adaptive **antennas** . Although **directional antennas** 208, 209 are illustrated as hom antennas, those skilled in the art will appreciate that **directional antennas** 208, 209 are representative of any suitable device consistent with the teachings herein, such as...

...antennas, hom antennas, and/or biconical antennas. The foregoing is also generally true for other **directional antennas** described herein. In addition, the inventor points out that in some implementations the antenna steering...

...antenna steering unit 252, antenna signal generation/detection unit 254, antenna control unit 256, onmidirectional **antenna** 268, and **directional antennas** 258, 259. The other components of **mote** 100 are also present in **mote** 250, but not explicitly shown for sake of clarity. The components of **mote** 250 function in fashions similar to like components described in relation to **mote** 200 and/or elsewhere herein.

Mote 270 is illustrated as similar to mote 100 of...

...steering unit 252, antenna signal generation/detection unit 274, antenna control unit 276, on-inidirectional **antenna** 278, and 9 **directional antennas** 288, 289. The other components of **mote** 100 are also present in **mote** 270, but not explicitly shown for sake of clarity. The

components of **mote** 270 function in fashions similar to like components described in relation to **mote** 200 and/or elsewhere herein.

Those skilled in the art will appreciate that there are various ways in which the **directional antennas** may be combined with the motes. In some implementations, semiconductor processing techniques are utilized to forin at least a part of each **mote** having one or more **directional antennas**. In some implementations, micro-electromechanical-system or electrooptical techniques are utilized to form or control at least a part of each **mote** having one or more **directional antennas**. In some implementations, circuit techniques and circuit board substrates are used to form at least a part of each **mote** having one or more **directional antennas**. In some implementations, various combinations of the herein described techniques are used to form at least a part of each **mote** having one or more **directional antennas**.

IL PROCESS(ES) AND/OR SCHEME(S)
Following are a series of flowcharts depicting implementations...

...process. Method step 302 depicts - 10 adjusting a field of regard of a first-mote **directional antenna**. Method stop 304 illustrates monitoring one or more indicators of received signal strength, signal-to-noise ratio, or other signal characteristic, of the first- **mote directional antenna**. Method step 306 shows determining a direction associated with a second **mote** in response to the monitored one or more indicators of the received signal strength of the first- **mote directional antenna**.

Method step 308 depicts adjusting the field of regard of the first-mote **directional antenna** to orient toward the determined direction associated with the second **mote**. Method step 3 10 depicts the end of the process. Specific example implementations of the...

...the first-mote directional ill likely operably align with a beam of a second-mote **directional antenna**. (By **antenna** wi
convention, "field of regard" is sometimes used herein when describing an example wherein an...

...control unit 256 directs antenna steering unit 252 to sweep a field of regard of **directional antenna** 258 at a rate likely to be different from that of a rate of sweep of a beam of another **directional antenna**. For example, **antenna** control units 206, 256 directing their respective antenna steering units 202, 252 to sweep their respective **directional antennas** 208, 258 at rates which are likely to be different. One implementation of the foregoing...

...control unit 206, 256 to direct their respective antenna steering units 202, 252 to rotate **directional antennas** 208, 258 for a time period long enough such that **directional antenna** 208 completes 360 total rotations.

- I I Referring now to Figure 5, illustrated is a...
...by a quasi-random amount from a nominal rate of rotation of the first-mote **directional antenna** and the second- **mote directional antenna**.

In one embodiment of method step 500, antemia control unit 256 directs antenna steering unit 252 to rotate a field of regard of **directional antenna** 258 at a rate of rotation varied by a quasi-random amount from a nominal rate of rotation shared by at least one other **mote** (as used herein, "nominal" generally means according to plan or design). For example, in one...

...logic to vary that recalled nominal rate of rotation by some amount to devise a **mote** 250 resultant rate of rotation (e.g., 360 degrees/unit-time). Thereafter, antenna control unit 256 directs antenna steering unit 252 to rotate **directional antenna** 258 at the **mote** 250 resultant rate of rotation. At or around the same time, antenna control unit 202 engages in a similar set of operations to devise a **mote** 200 rate of rotation. Insofar as that the **mote** 200 rate of rotation and the **mote** 250 rate of rotation were devised by quasi-random variations on substantially the same nominal rates of rotation, it is likely that the **mote** 200 rate of rotation will be different than the **mote** 250 rate of rotation. Hence, eventually the field of regard of **directional antenna** 208 will operably align with the beam of **directional antenna** 258 such that signals may be respectively received/transmitted between the **directional antennas**. In some implementations, the **directional antennas** are rotated for a pre-specified period of time. In some implementations, the **directional antennas** are rotated until either a strong signal is detected or a timeout occurs.

In one...

...608. Method step 608 shows selectively displacing at least a part of the first-mote **directional antenna**. In some implementations of method step 608, such as instances where **directional antenna** 258 is implemented with a horn antenna or a biconical antenna, antenna steering unit 252...

...step 302 includes method step 610. Method step 610 shows selectively tuning the first-mote **directional antenna** (e.g., via switchable tuning stubs). In some implementations of method step 61 0, such as instances where **directional** antenna 25 8 is implemented with a tunable antenna (e.g., antennas having tuning stubs), antenna...

...switches in and out the various tuning stubs to direct the field of regar4 of
directional antenna 2 5 8
Referring now to Figure 7, illustrated is a high-level logic flowchart...

...shows - 14 logging one or more indicators of the received signal strength of the first- **mote directional antenna**.

In one embodiment of method step 700, antenria control unit 256 directs antenna signal generation...step 1002 depicts determining a direction of the field of regard of the first-mote **directional antenna** associated with the substantially maximum signal power.

In one embodiment of method step 1000, antenna...

...of the process. Method step II 02 depicts adjusting a beam of a

second-mote **directional antenna** . Method step 1 104 illustrates transmitting a signal over the beam of the second- **mote directional antenna** . Method step 1106 depicts the end of the process. Specific example implementations of the more...

...method step 1200. Method step 1200 shows selectively forming the beam of the second-mote **directional antenna** .
In one embodiment of method step 1200, antenna control unit 206 directs antenna steering unit...

...method step 1202. Method step 1202 depicts selectively switching the beam of the second-mote **directional antenna** .

In some implementations of method step 1202, antenna control unit 206 directs antenna steering unit...

...includes method step 1204. Method step 1204 depicts selectively steeringthe beam of the second-mote **directional antenna** .

In some implementations of method step 1204, antenna control unit 206 directs antenna steering unit...

...method step 1206. Method step 1206 depicts selectively adapting the beam of the second-mote **directional antenna** .

In some implementations of method step 1206, antenna control unit 206 directs antenna steering unit 202 to selectively adapt one or more beams of **directional antenna** 208 such that a beam is moved across one or more angles. One example of the foregoing could include selectively adapting the beam of the second- **mote directional antenna** .

With reference again to Figures 3 and II, method step 302 of Figure 3, and...

...supporting text, show and/or describe adjusting a field of regard of a first-mote **directional antenna** . Method step II 02 of Figure I 1, and its supporting text, illustrate and/or describe adjusting a beam of a second- **mote directional antenna** (e.g., **directional** antenria 208 of **mote** 200).

Figures 4-6 show and/or describe several implementations of adjusting a field of regard of the first-mote **directional antenna** . The inventor points out that implementations substantially analogous to those shown for method step 302...

...herein will in general have a corresponding implementation by which the beam of a second- **mote directional antenna** is analogously adjusted. Those having skill in the art,will appreciate that insofar as that...

...1502 depicts initiating at least one of said adjusting a beam of a second-mote **directional antenna** and/or said transmitting a signal over the beam of the second- **mote directional antenna** in response to said detecting the initiation signal.

In one embodiment of method step 1500, antenna signal creneration/detection unit 204 detects an incoming pre-defined seek-mote-

antennas signal over **directional antenna** 208. Signal generation/detection unit 204 informs antenna control unit 206 that the seekmote-antennas...

...signal and/or communicates with antenna steering unit 252 to begin adjusting a beam of **directional antenna** 208 as described herein (e.g., by moving the beam in an arc or circle...

...the process. Method step 1602 depicts adjusting a field of regard of a first-mote **directional antenna** in response to a direction associated with a second- **mote directional antenna** . Method step 1604 illustrates - 20 transmitting a signal from the first- **mote directional** . **antenna** and/or receiving a signal from the first- **mote directional antenna** (e.g., transmitting the signal over a beam of the first- **mote directional antenna** and/or receiving the signal through a field of regard of the first- **mote directional antenna**). Method step 1606 depicts the end of the process.
Specific example implementations of the more...

...method step 1602 includes method step 1700. Method step 1700 shows localizing the second-mote **directional antenna** . Specific example implementations of the more general process implementations of Figure 17 are described following...

Claim
... 1 A mote method comprising:
ad usting a field of regard of a first-mote **directional antenna** ;
monitoring one or more indicators of a received signal strength of the first- **mote**
directional antenna ; and
determining a direction associated with a second **mote** in response to the
monitored one or more indicators of the received signal strength of the first- **mote directional antenna** .

2 The method of Claim 1, wherein said adjusting a field of regard of a first-mote
directional antenna further comprises:
moving the field of regard such that the field of regard of the first- **mote directional antenna** will likely operably align with a beam of a second- **mote directional antenna** .

3 The method of Claim 2, wherein said moving the field of regard such that the field of regard of the first-mote **directional antenna** will likely operably align with a beam
of a second- **mote directional antenna** further comprises:
rotating the field of regard at a rate of rotation varied by a quasi-random amount from a nominal rate of rotation of the first- **mote directional antenna** and the second- **mote directional antenna** .

4 The method of Claim 2, wherein said moving the field of regard such that the field of regard of the first-mote **directional antenna** will likely operably align with a beam
of a second- **mote** directional antenna further comprises:
moving the field of regard through at least two angles at a quasi...

...said moving the field of regard such that the field of regard of the first- **mote directional antenna** will likely operably align with a beam
of a second- **mote directional antenna** further comprises:
moving the field of regard for a quasi-randomly selected period of time ...

...method of Claim 1, wherein said adjusting a field of regard of a first-mote
directional antenna further comprises:
selectively varying one or more relative phases respectively associated with one or more...

...method of Claim 1, wherein said adjusting a field of regard of a first mote **directional antenna** further comprises:
selectively displacing at least a part of the first- **mote directional antenna** . I I - The method of Claim I 0, wherein said selectively displacing at least a part of
the first- **mote directional antenna** farther comprises:
selectively adjusting a feed of a hom antenna. - 27 . The method of Claim 1, wherein said adjusting a field of regard of a first
mote directional antenna further comprises:
selectively tuning the first- **mote** directional antemia.

13 The method of Claim 1, wherein said monitoring one or more indicators of a received signal strength of the first-mote **directional antenna** further comprises: logging one or more indicators of the received signal strength of the first- **mote directional antenna** .

14 The method of Claim 1, wherein said deten-nining a direction associated with a...

...the monitored one or more indicators of the received signal
strength of the first-mote **directional antenna** further comprises:
selectively varying a reception frequency.

15 The method of Claim 14, wherein said...

...the monitored one or more indicators of the received signal
strength of the first-mote **directional antenna** further comprises:
determining a substantially maximum signal power associated with a beacon-,
signal; and
determining a direction of the field of regard of the first- **mote directional antenna** associated with the substantially maximum signal power.

18 The method of Claim 1, further comprising:
- 28 adjusting the field of regard of the first-mote **directional antenna** to orient toward the deterinined direction associated with the second **mote** . - 29
. A **mote** system comprising:
means for adjusting a field of regard of a first- **mote directional antenna** ; means for monitoring one or more indicators of a received signal strength of@the
first- **mote directional antenna** ; and

means for determining a direction associated with a second **mote** in response to the monitored one or more indicators of the received signal strength of the first- **mote** directional anteniia. - 30

. A **mote** method comprising:

adjusting a beam of a second- **mote** **directional** **antenna** -, and

transmitting a signal over the beam of the second- **mote** **directional** **antenna** .

21 ThemethodofClaim2O,whereinsaidadjustingabeamofasecond-mote **directional** **antenna** further comprises:

selectively forming the beam of the second- **mote** **directional** **antenna** .

22 The method of Claim 20, wherein said adjusting a beam of a second-mote **directional** **antenna** further comprises:

selectively switching the beam of the second- **mote** **directional** **antenna** .

23 The method of Claim 20, wherein adjusting a beam of a second-mote directional anterma further comprises:

selectively steering the beam of the second-mote **directional** **antenna** .

24 The method of Claim 20, wherein said adjusting a beam of a second-mote ...

...The method of Claim 20, wherein said ad usting a beam of a second-mote **directional** **antenna** further comprises:

moving the beam such that the beam of the second- **mote** **directional** **antenna** will likely operably align with a field of regard of the first- **mote** **directional** **antenna** .

26 The method of Claim 25, wherein said moving the beam such that the beam of the second-mote **directional** antenna will likely operably align with a field of regard of

the first- **mote** **directional** **antenna** further comprises:

- 31 rotating the beam at a rate of rate of rotation varied by a quasi-random amount from a nominal rate of rotation of the second- **mote** **directional** **antenna** and the first- **mote** **directional** **antenna** .

27 The method of Claim 25, wherein said moving the beam such that the beam of the second-mote **directional** **antenna** will likely operably align with a field of regard of

the first- **mote** **directional** **antenna** further comprises:

moving the beam through at least two angles at a quasi-randornly selected ...

...Claim 25, wherein said moving the beam such that the beam of the second-mote **directional** **antenna** will likely operably align with a field of regard of

the first- **mote** **directional** **antenna** further comprises:

moving the beam for a' quasi-randomly selected period of time.

29 The...

...33 The method of Claim 20, wherein said adjusting a beam of a second-mote

directional **antenna** further comprises:

selectively displacing at least a part of the second- **mote** **directional** **antenna** .

34 The method of Claim 33, wherein said selectively displacing at least a part of
the second-mote **directional** **antenna** further comprises:
selectively adjusting a feed of a hom anteima.

35 The method of Claim 20, wherein said adjusting a beam of a second-mote **directional** **antenna** further comprises:
selectively tuning the second- **mote** **directional** **antenna** .

36 The method of Claim 20, wherein said transmitting a signal over the beam of
the second-mote **directional** **antenna** further comprises:
selectively varying a transmission frequency.

37 The method of Claim 36, wherein said...

...of Claim 20 wherein said transmitting a signal over the beam of
the second-mote **directional** **antenna** further comprises:
- 33
detecting an initiation signal; and
initiating at least one of said adjusting a beam of a second- **mote** directional
'd transmitti g a signal over the beam of the second- **mote** di ectional anterma or sal in ir
antenna, in response to said detecting. - 34
. A **mote** system comprising:
means for adjusting a beam of a second- **mote** **directional** **antenna** ; and
means for transmitting a signal over the beam of the second- **mote** **directional** **antenna** . - 35
. A **mote** method comprising:
adjusting a field of regard of a first- **mote** **directional** **antenna** in response to a
direction associated with a second- **mote** **directional** **antenna** ; and
at least one of transmitting a signal from the first- **mote** **directional** **antenna** or receiving a signal from the first- **mote** **directional** **antenna** .

42 The mote method of Claim 41, wherein said adjusting a field of regard of a first-mote **directional** **antenna** in response to a direction associated with a second- **mote**
directional **antenna** further comprises:
localizing the second- **mote** **directional** **antenna** .

43 The mote method of Claim 42, wherein said localizing the second-mote **directional** **antenna** further comprises:
adjusting a field of regard of a first- **mote** **directional** **antenna** ;
monitoring one or more indicators of a received signal strength of the first- **mote**
directional **antenna** signal; and
determining a direction associated with a second **mote** in response to the
monitored one or more indicators of the received signal strength.

44 The mote method of Claim 41, wherein said transmitting a signal from the
first-mote **directional antenna** further comprises:
transmitting the signal over a beam of the first- **mote directional antenna** .

45 The mote method of Claim 41, wherein said receiving a signal from the first
mote **directional antenna** further comprises:
receiving the signal through a field of regard of the first- **mote directional antenna** . - 36
. A **mote** system comprising:
means for adjusting a field of regard of a first- **mote directional antenna** in response to a direction associated with a second- **mote directional antenna** ; and at least one of means for transmitting a signal from the first- **mote directional antenna** or means for receiving a signal from the first- **mote directional antenna** . 37

3/3,K/13 (Item 11 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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01288733 **Image available**
AGGREGATING MOTE-ASSOCIATED INDEX DATA
GROUPEMENT DE DONNEES D'INDEX ASSOCIES A DES MOTES
Patent Applicant/Assignee:
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Application: WO 2005US9703 20050322 (PCT/WO US05009703)
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Detailed Description

Detailed Description
... HAVING
DIRECTIONALANTENNAS,nan-iingClarenceT.Tegreeneasinventor,
filed substantially contemporaneously herewith.

6. United States patent application entitled **MOTE** NETWORKS USING **DIRECTIONAL ANTENNA** TECHNIQUES, naming Clarence T.

Tegreene as inventor, filed substantially contemporaneously herewith.

TECHNICAL FIELD
The present...

3/3,K/14 (Item 12 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00371478
METHOD FOR THE IDENTIFICATION AND THERAPEUTIC USE OF DISEASE-ASSOCIATED ORGANISMS, ELEMENTS AND FORCES
PROCEDE D'IDENTIFICATION ET D'UTILISATION THERAPEUTIQUE D'ORGANISMES, D'ELEMENTS ET DE FORCES ASSOCIES A UNE MALADIE
Patent Applicant/Assignee:
CHACHOUA Samir,
Inventor(s):
CHACHOUA Samir,
Patent and Priority Information (Country, Number, Date):
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Priority Application: US 953686 19950915
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AL AM AU BB BG BR CA CN CU CZ EE FI GE HU IS JP KE KG KP KR LK LR LT LV MD MG MK MN MW MX NO NZ PL RO SG SI SK TR TT UA UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 267093

Fulltext Availability:
Claims

Claim
... causc of them increases in cancer. Protection may be provided by tha
&sign of a **directional** or, shielded **antennae** . Shielding may be

itibuilt within the communicatiorw device, or added to pre-exisbag equipment or...

...or other device placed between the ClWator and the device. :It may also take the **mote** complex form of a Faraday cage mwerunding the antenm with only certain exit points allowed...
?

BUSINESS FULLTEXT

File 9:Business & Industry(R) Jul/1994-2007/Apr 04
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File 15:ABI/Inform(R) 1971-2007/Apr 05
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File 20:Dialog Global Reporter 1997-2007/Apr 05
(c) 2007 Dialog
File 47:Gale Group Magazine DB(TM) 1959-2007/Mar 27
(c) 2007 The Gale group
File 75:TGG Management Contents(R) 86-2007/Mar W4
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File 80:TGG Aerospace/Def.Mkts(R) 1982-2007/Apr 04
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File 608:KR/T Bus.News. 1992-2007/Apr 05
(c)2007 Knight Ridder/Tribune Bus News
File 620:EIU:Viewswire 2007/Apr 04

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File 613:PR Newswire 1999-2007/Apr 05
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File 621:Gale Group New Prod.Annou.(R) 1985-2007/Apr 04
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File 635:Business Dateline(R) 1985-2007/Apr 05
(c) 2007 ProQuest Info&Learning
File 636:Gale Group Newsletter DB(TM) 1987-2007/Apr 04
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File 647:CMP Computer Fulltext 1988-2007/Jun W3
(c) 2007 CMP Media, LLC
File 696:DIALOG Telecom. Newsletters 1995-2007/Apr 05
(c) 2007 Dialog
File 674:Computer News Fulltext 1989-2006/Sep W1
(c) 2006 IDG Communications
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 587:Jane's Defense&Aerospace 2007/Apr W1
(c) 2007 Jane's Information Group

Set Items Description
--- ----- ----------
? s mote
S1 13235 MOTE
S2 6185 DIRECTIONAL(3N)ANTENNA?
S3 1 S1(S)S2
? t3/3,k/all

3/3,K/1 (Item 1 from file: 88)
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Topology insensitive location determination using independent estimates through semi-directional antennas.(Author abstract)
Yang, Chin-Lung; Bagchi, Saurabh; Chappell, William J.
IEEE Transactions on Antennas and Propagation, 54, 11, 3458(15)
Nov, 2006
DOCUMENT TYPE: Author abstract ISSN: 0018-926X LANGUAGE: English
RECORD TYPE: Abstract

...AUTHOR ABSTRACT: network. A method of determining the location of a target by using multiple compact semi- **directional antennas** is shown to give an independent estimate of location from each sensor **mote** in a network, each estimate not relying on the data from neighboring motes as in
...

...traditional triangulation. We begin by demonstrating a method of using

angular diversity through multiple semi- **directional antennas** in order to ascertain the location of a target. The estimation of both range and...

...a noisy and/or faded channel. An efficient and fast algorithm on a wireless sensor **mote** is presented through a Taylor series expansion of the simulated antenna pattern. Furthermore, using the...
?